09-05-00 A

UTILITY PATENT APPLICATION TRANSMITTAL
(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No. : 40288/DWR/D453
Inventor(s) : Richard Prentiss Jensen and Joshua Dov Joseph Sharfman
Title : SYSTEM AND METHOD FOR ASSEMBLING DISCRETE DATA FILES INTO AN EXECUTABLE FILE AND FOR PROCESSING THE EXECUTABLE FILE
Express Mail Label No. : EL386999704US

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

Date: August 31, 2000

1. X **FEE TRANSMITTAL FORM** *(Submit an original, and a duplicate for fee processing).*

2. **IF A CONTINUING APPLICATION**
___ This application is a of patent application No. .

Prior application information: Examiner ; Group Art Unit:

___ This application claims priority pursuant to 35 U.S.C. §119(e) and 37 CFR §1.78(a)(4), to provisional Application No. .

3. **APPLICATION COMPRISED OF**

Specification
40 Specification, claims and Abstract (total pages)

Drawings
13 Sheets of drawing(s) (FIGS. 1 to 13)

Declaration and Power of Attorney
___ Newly executed
X Unexecuted declaration
___ Copy from a prior application (37 CFR 1.63(d))(for continuation and divisional)

4. ___ **Microfiche Computer Program** *(Appendix)*

5. ___ **Nucleotide and/or Amino Acid Sequence Submission** *(if applicable, all necessary)*
___ Computer Readable Copy
___ Paper Copy (identical to computer copy)
___ Statement verifying identity of above copies

6. **ALSO ENCLOSED ARE**
___ Preliminary Amendment
___ A Petition for Extension of Time for the parent application and the required fee are enclosed as separate papers
___ Small Entity Statement(s)

UTILITY PATENT APPLICATION TRANSMITTAL
(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.: 40288/DWR/D453

___ Statement filed in parent application, status still proper and desired
___ Copy of Statement filed in provisional application, status still proper and desired
____ An Assignment of the invention with the Recordation Cover Sheet and the recordation fee are enclosed as separate papers
____ This application is owned by pursuant to an Assignment recorded at Reel , Frame
____ Information Disclosure Statement (IDS)/PTO-1449
____ Copies of IDS Citations
____ Certified copy of Priority Document(s) *(if foreign priority is claimed)*
____ English Translation Document *(if applicable)*
__X__ Return Receipt Postcard (MPEP 503) (should be specifically itemized).
____ Other

7. CORRESPONDENCE ADDRESS

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Respectfully submitted,

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FEE TRANSMITTAL
UTILITY PATENT APPLICATION

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FEE CALCULATIONS					
	CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	CALCULATIONS
A	TOTAL CLAIMS	16 - 20 =	0	0 x $9.00	$0
B	INDEPENDENT CLAIMS	2 - 3 =	0	0 x $39.00	$0
C	SUBTOTAL	SMALL ENTITY FEE = A + B LARGE ENTITY FEE = 2 X (A + B)			0
D	BASIC FEE	SMALL ENTITY FEE = $345.00 LARGE ENTITY FEE = $690.00			$345
E	MULTIPLE-DEPENDENT CLAIMS FEE	SMALL ENTITY FEE = $130.00 LARGE ENTITY FEE = $260.00			0
F	TOTAL FILING FEE (ADD LINES C, D, AND E)				$345
List Independent Claims: 1, 12					

METHOD OF PAYMENT

__X__ No filing fee enclosed

__X__ No Deposit Account Authorization.

Respectfully submitted,

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CAH PAS270994.1-*-8/31/00 1 41 PM

40288/DWR/D453

SYSTEM AND METHOD FOR ASSEMBLING DISCRETE DATA FILES INTO AN EXECUTABLE FILE AND FOR PROCESSING THE EXECUTABLE FILE

CROSS-REFERENCE TO RELATED APPLICATIONS

This application contains subject matter than may be considered related to the subject matter disclosed in U.S. patent application Attorney Docket No. D453:40289, entitled SYSTEM AND METHOD FOR CONTROLLING SYNCHRONIZATION OF A TIME-BASED PRESENTATION AND ITS ASSOCIATED ASSETS; Attorney Docket No. D453:40287, entitled SYSTEM AND METHOD FOR TRANSFORMING DATA INTO A TEMPLATE-BASED FORMAT; and Attorney Docket No. D453:39800, entitled SYSTEM AND METHOD FOR MANIPULATION AND INTERACTION OF TIME-BASED MIXED MEDIA FORMATS, all filed on August 31, 2000, the contents each being hereby expressly incorporated by reference.

FIELD OF THE INVENTION

The present invention relates to a system and method for collecting and assembling data for subsequent presentation to a recipient. More particularly, the invention relates to a system and method that provides an improved interface to facilitate the creation of such a presentation.

BACKGROUND OF THE INVENTION

Information is collected and presented to people in many different ways. Written text, in the form of books, newspapers, and magazines, represents one conventional way of presenting readers with information. Electronically, the written text, in the form of text data, may be presented to people over a computer or

other similar device. For example, people may access a web site that provides news and other textual information, along with information in other media formats, such as pictures and other images.

Another way in which information is presented to people is via a presentation, in which a person communicates such information to a person or group of persons. To assist the presenter in communicating such information, conventionally an overhead projector is used to display a sequence of transparent slides, with each slide typically consisting of text and/or some graphical image.

With computers gaining in terms of popularity, such presentations are often carried out through the use of a computer running appropriate software. One example of such software is PowerPoint™ available from Microsoft Corporation. As is well known in the art, PowerPoint™ creates a series of screen slides that typically include written text, and that may include a graphical image or the like. The screens are arranged in some order as dictated by the author. During presentation, the screens are displayed, with the progression from one screen to another being controlled by the presenter, or alternatively being performed automatically by the software.

While such software provides significant benefits and advantages, there are still disadvantages associated therewith. For example, in a conventional presentation, the author must bring the presentation, run PowerPoint™, and carry out the presentation. In addition, there is no provision for on-demand sharing of the presentation.

Moreover, a drawback associated with a number of the prior art systems is that the presentation becomes relatively large, and

includes a large number of discrete files. Such a presentation can become a burden to transfer. In addition, when those files are transferred and stored on a recipient's machine, they often consume a large amount of space, even after the recipient is finished with the presentation. Further, in a number of prior art systems the discrete files are transferred in an uncompressed format, which increases the burden of transferring the presentation.

Thus, it would be desirable to have a system and method that process the files comprising a presentation in such a manner so as to create a single file of relatively small size for transferring to a recipient. In addition, it would be desirable to have a system and method that is operative to remove the presentation from a recipient's machine after they view the presentation. Moreover, it would be desirable to process such a file at the recipient's machine. The present invention addresses one or more of these desirable features.

SUMMARY OF THE INVENTION

The present invention provides a system and method for creating a multi-media presentation, as well as allowing a recipient of the presentation to search through the presentation to retrieve and display desired subject matter. The invention preferably provides software that allows an author to record audio clips (e.g., narration) for one or more of the screens of the presentation, in any order, and in various manners. In addition, the invention maintains an internal, searchable data file with associated timing information to allow a recipient to find desired subject matter within the presentation, and to display the corresponding screen(s). Moreover, the invention transforms the plurality of files that comprise the presentation into an

executable file that can be viewed with a conventional web browser.

Thus, in one embodiment, the invention is directed to a method of preparing a mixed media presentation. Initially, plural sets of text data are received for insertion into respective screen slides. Audio data for one or more of the screen slides is also received. The text data and associated timing information are copied into a data file, and the text and audio data are then concatenated together and then compressed. Finally, the screen slides are converted to images, and the images and concatenated audio and text data are assembled into an executable file, along with additional controlling software.

In another embodiment, the invention is directed to a method of unpackaging and launching an executable file, including providing the executable file including executable code and a plurality of blocks of data, running the executable code to identify one of the blocks, processing identification information in the block to determine the contents of the block, reading the data in the block and creating a corresponding directory if the block is a destination directory block, decompressing the data in the block and writing the decompressed data to an appropriate directory if the block is a compressed file block, writing the data in the block to a temporary directory if the block contains a clean-up program, and saving the information in the block if the information contains auto-start path information.

DESCRIPTION OF THE DRAWINGS

Other features and advantages of the invention will become apparent from a description of the figures, in which:

FIG. 1 is a schematic diagram of a system for creating multi-media presentations according to one illustrative embodiment of the

present invention;

FIG. 2 is a flow chart depicting the operational flow of the system of FIG. 1 during the creation of a presentation;

FIG. 3 is a flow chart depicting in detail the exportation of data into a template-based format according to one illustrative embodiment of the invention;

FIG. 4 is a flow chart depicting in detail the assembly of a presentation into a single, executable file according to one illustrative embodiment of the invention;

FIG. 5 is a flow chart depicting the operational flow of an unpackaging process according to one illustrative embodiment of the invention;

FIG. 6 is a flow chart depicting the operational flow during playback of a presentation created according to the system of FIG. 1;

FIG. 7 is a flow chart of an event handling process according to one illustrative embodiment of the invention; and

FIGS. 8 through 13 are screen shots during creation of a multi-media presentation.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to FIGS. 1 and 2, there is shown a system 20 for creating multi-media presentations according to one illustrative embodiment of the present invention. System 20 includes a user interface 22 including an input device 23 and display 28, a processor 24, memory 26, and microphone 30. Memory 26 stores suitable software for creating the multi-media presentations, as is described in more detail below.

Input device 23 of user interface 22 may take any suitable form, such as a keyboard, keypad, mouse, any other input device, or

any combination thereof. An author may enter text data through user interface 22, or may use the interface to select appropriate graphical information from a disk storage medium or other source, as is described in more detail below.

Processor 24 is connected to user interface 22, and to memory 26. Processor retrieves the presentation-creating software from memory, receives data and control commands from user interface 22, and displays the presentation information on display 28.

The present invention can be configured to be used, independently, by an end-user or, in the alternative, the invention can be integrated, as an add-in, into another presentation development application. In a preferred embodiment, the system of the present invention is designed for use in conjunction with Microsoft PowerPoint™. It will be understood by those skilled in the art that PowerPoint™ is merely one suitable software program into which the present invention may be incorporated.

Referring now to FIG. 2, an illustrative method according to the invention will be described for modifying and preparing an existing presentation that consists of multiple digital assets in the form of screen slides. Operation begins at step 40, with the processor 24 retrieving the presentation-creating software from memory 26. At step 42, processor initializes the system 20. Preferably, initialization consists of setting microphone 30 as the currently selected recording object and setting the recording level to one that will result in the recording being at a desirable level, such as 50%.

During initialization, processor 24 also preferably resets the size of link sound files. Preferably, processor 24 is programmed to initialize the linked sound files to a relatively large size. In a preferred embodiment, the preset size is 2 megabytes. It will

be understood that the file size could be made to be larger or smaller, as necessary.

At step 44, system 20 receives an existing presentation, either from an external source, or from memory 26. The presentation consists of a plurality of screen slides arranged in some predetermined order. In one embodiment, the first screen slide of the presentation is presented on display 28. At step 46, the author selects one of the screen slides, for example, by clicking on suitable icons in a tool bar to scroll through the screen slides, through a drop-down menu, or in any other suitable manner.

Once the author has selected a particular screen slide, operation proceeds to step 48, and processor 24 receives an audio clip to be linked with that screen slide. A suitable icon is preferably displayed on the screen to alert the author that they can begin speaking the desired audio clip, with the microphone 30 capturing the audio and forwarding the audio data on to processor 24. Alternatively, the audio clip can be imported from a file, disk, or the like.

Processor 24 stores the audio data in a suitable temporary file. In addition, processor 24 generates a link between the audio data and the corresponding screen slide, and stores that link, either with the audio clip itself, or in a separate linked file. Alternatively, the audio clip can be stored directly with the screen slide in a slide object, as described in more detail below, thereby obviating the need for any file linking.

In another embodiment, the author can progress through all of the slides sequentially, such as if they were making a live presentation, without the need to use the narration capture interface. The narration would be captured automatically along

with the slide advance timings. This embodiment is very useful for creating an archive of a live presentation at the time of the live presentation and as a by-product of the live presentation.

At query block 50, processor 24 determines whether there are additional slides for which an author desires to record audio clips. In one illustrative embodiment, processor may query the author whether they wish to record additional audio clips. If so, operator proceeds back to step 46, and the author selects another slide. Alternatively, processor 24 can display the screen slides sequentially, with the author deciding whether to record an audio clip for a particular screen slide when that screen slide is displayed on display 28.

If, on the other hand, there are no more audio clips to be recorded, then operation proceeds to step 52, and the author selects one or more of the screen slides for assembling into a final presentation, along with a desired compression format to be employed. Such selection of the slides can be done through a drop-down menu, or by scrolling through the various screen slides and selecting the desired slides, or in any other suitable manner. The selection of the compression format can be done via a drop-down or other suitable menu.

Once the author has finished selecting the slides for assembly, operation proceeds to step 54, and processor 24 generates a playlist object corresponding to the selected slides. The playlist object is an intermediate representation of the metadata, and contains the semantic and relationship information for the content, and is a self-contained entity that consists of both data and procedures to manipulate the data. The playlist object includes a media object to store the audio clips, a screen slide object to store the screen images, and a text object to store the

text contained in the various screen slides. The media, text, and screen objects also store timing information that defines the temporal relationships between the respective types of data, as is described in more detail below.

Then, at step 56, processor 24 copies the text from the selected screen slides as searchable text data into the text object. The text for each slide may be preceded by an appropriate header or the like so that a link is maintained between the text data and the particular screen slide from which that text data originated. At step 58, the individual audio files from each of the selected screen slides are extracted from the respective slide objects and are concatenated into a single audio file which is stored in the media object. The single audio file is then compressed using the particular compression format previously selected by the author, at step 60. Thus, by allowing the author to select the compression format and then compressing the audio file after concatenating the individual audio clips together, the author may to some extent control the file size and sound quality.

Alternatively, instead of "physically" concatenating the audio files together as described above, a new file may be created that maintains plural links to the respective audio files. This is an alternate version of concatenation that may be used in connection with the invention.

At step 62, slide timing information from the selected slides is extracted from each slide object, and the information is stored in a suitable file. For example, each screen slide will have timing information relating to the start and stop times that the screen slide is to be displayed, which serves to determine the order in which the screen slides are to be displayed.

Then, at step 64, the selected screen slides are saved in a graphics file format, preferably in Graphics Interchange Format ("GIF") format, and stored in the screen slide object. It will be apparent to those skilled in the art that other suitable graphics file formats may also be used.

At step 66, processor 24 assembles the selected screen slides, in GIF or some other format, with the corresponding audio files, text file, and the file containing the timing information, to create a single compressed, executable file. The process of forming the single executable file is described in greater detail below in connection with FIG. 4. The executable file may then be forwarded to one or more recipients for subsequent viewing of the presentation. For example, the file can be a Windows® 98 or Windows® NT standard executable file, as is well known to those skilled in the art. As is well known, an executable file is a binary file containing a program in machine language that is ready to be executed when the file is selected. In that manner, the executable file may be opened within a suitable web browser or directly in the operating system interface without the need for the presentation software that was used to create the presentation, as is described in greater detail below in connection with FIG. 3.

It will be apparent that the system 20 may be used with appropriate software to create the entire presentation at one time. Thus, rather than retrieving a multi-media presentation, system 20 can present an author with blank templates, into which the desired text and/or graphical data can be entered. Audio clips can then be recorded for one or more of the created slides, either concurrently with the creation of the slide, or after the slides are completed.

Referring to FIG. 3, an export process that is used to process data contained in the playlist object is described in detail. The export process is designed to transform the data into a template-defined data format suitable for display within a browser. The export process utilizes a plurality of text templates and slide page templates to arrange the meta data from the playlist object such that it is in a browser-suitable format, so that the presentation can be displayed in a browser without the need for the presentation software used to create the presentation. In addition, executable java scripts and applets are generated and inserted into the template, and are run in the browser to allow for the presentation to be displayed in the browser.

The export process begins at step 70, with processor 24 retrieving the playlist object with the slides and clips in temporal order. At step 72, the export process retrieves a template from the set of templates. For example, the template may be a text information file that will contain information describing how the meta data from the playlist object needs to be formatted into a format that is suitable for running in the browser. In addition, the template contains information relating to the layout of the presentation, for example, the relative locations on the display of the slides, table of contents, media player controls, search results, and the like. The template also will contain formatting information, for example, text font, size, color, and similar attributes. Moreover, the template also contains references to other files that are used in the display of the presentation.

At step 74, the export process processes the command parameters contained in the template to determine what type of file

it is, and the destination of the completed file. At step 76, the export process reads the first tag in the template. The tag serves as a text replacement holder. For example, the first tag may instruct the export process to process the table of contents information, the text information, or the slide page information. Within the first tag there are a number of subordinate tags (i.e., there is a hierarchy of inner and outer loops of tags). Thus, where the first tag corresponds to the table of contents, there will be multiple entries to be processed, such as the title of each slide. Then, for the first title, there are plural tags in the template to be replaced with corresponding data from the playlist object. For example, the tags may correspond to character font, size, spacing, positioning, and the like. Thus, each tag is replaced by the corresponding information contained in the playlist object. In the case where the template is a text template, processor 24 retrieves the text-related meta data and inserts that information into the template. Likewise, in the case of a slide page template, the corresponding meta data relating to the slide is retrieved and inserted into the appropriate location of the template based on the tags in the template.

Thus, at step 78, based on the particular tag read by the export process, corresponding meta data is retrieved from the playlist object and inserted into the template, along with references to the appropriate files, for example, a slide file or the data file containing the actual text data. At query block 80, the export process determines whether there are additional tags remaining in the template to be replaced with information from the playlist object. If so, operation proceeds back to step 76.

On the other hand, if all of the tags have been replaced for a particular template, operation instead proceeds to query block 82, and the export process determines whether there are additional templates to be processed. If so, operation proceeds back to step 72. If not, operation proceeds to step 84, and the export process searches for .tpl files (i.e., template files). For each .tpl file, the export process creates a new file for each slide and replaces an internal tag with the name of the graphic file. The process then terminates.

Thus, by processing the data using the export process and the template-defined format, the presentation may be viewed in a conventional web browser. Thus, a recipient of the presentation need not have PowerPoint™ software in order to view the presentation.

Referring now to FIG. 4, the process of packaging the files into a single, executable file is described in detail. Operation begins at step 90, with processor 24 receiving input from the author regarding packaging information and preferences. For example, the author is prompted to input an output file name, the name of the directory to be packaged (i.e., where the respective files are currently stored), a directory name where the unpackaged files should be stored, an auto-start file (i.e., the first file to be opened when the executable file is selected), and package identification information to uniquely identify the package and its source or origin. At step 92, processor 24 creates and opens an output file into which the single file will be stored.

At step 94, executable code is copied to the output file. As is well known in the art, the executable code is the code that is run when an executable file is selected. The executable code

controls the unpackaging process, as is described in more detail below in connection with FIG. 5.

At step 96, in the event that package identification information was input by the author, corresponding block identification information and package identification information is written to the output file. The information preferably consists of a starting block flag, block identification information, and the package identification information itself.

Operation then proceeds to step 98, and the destination directory information is stored in the output file, along with a starting block flag and block identification information to identify the contents of the block. Following the identification information, a data string (e.g., a 16-bit string) is written to the output file, which indicates the length of the directory information. And finally, the destination directory information itself is written to the output file.

Then, at step 100, each file in the directory to be packaged is sequentially processed and written to the output file as an individual block. As described above, an author will have previously selected a number of the screen slides to be included in the presentation. Processor 24 accesses the playlist object and retrieves the GIF files for the selected slides from the screen slide object, the single concatenated and compressed audio file from the media object, and the data file containing the corresponding text data from the text object. In addition, processor 24 retrieves the file containing the timing information for the selected slides.

At step 100, for each file a starting block flag is written to the output file. File identification information is then stored to

identify the file. Next, the string length of the file name is written to the output file, followed by the file name itself. Then, processor 24 determines whether the file is compressed: if not, the file is compressed and stored in a temporary location. Processor 24 next writes information (preferably 32 bits) relating to the size of the compressed file to the output file. Finally, the compressed file is written to the output file, either from the temporary location, or from the originating directory. If a temporary file was created, it is then deleted.

Operation then proceeds to query block 102, and processor 24 determines whether the unpackaging directory is a temporary file. If not, operation proceeds to query block 106. If so, operation instead proceeds to step 104, and a clean-up program is retrieved by processor 24 to be included in the output file. The clean-up program is an executable file upon being expanded, and is operative to delete the files contained in a particular temporary file. In this manner, the expanded files contained within the executable file do not permanently occupy memory on the recipient's machine, unless the presentation is intended to be permanently saved on the recipient's machine, in which case a destination directory other than the temporary directory is selected.

Storage of the clean-up program is as follows: first, a starting block flag and clean-up program identification information are written to the output file. Then, the clean-up program is compressed to a temporary location in memory. The length of the compressed program is written to the output file, followed by the copy of the compressed program. The temporary compressed file is then deleted, and operation proceeds to query block 106.

At query block 106, processor 24 determines whether one of the files in the bundle was designated as an auto-start file. If not, operation terminates at step 110 with the closing of the output file. On the other hand, if one of the files was designated as an auto-start file, then operation instead proceeds to step 108, and starting block flag and auto-start identification information is written to the output file, followed by a 16-bit string to indicate the length of the auto-start string name, which is followed by the auto-start string itself. Operation then terminates at step 110, and the output file is closed.

In an alternative embodiment, the package process inserts a source-identifying block into the package, with such block serving to identify the source of the package. In this manner, the unpackaging process described below can verify the source of the package to ensure that the package does not contain any potentially harmful or offensive data.

Referring now to FIG. 5, the unpackaging of the packaged presentation is described in more detail. As is described above, a presentation is packaged into a single, executable file. The executable file may then be transferred to one or more recipients in various ways, either as an email attachment over a communications network, on a disk, or in any other suitable manner.

In another embodiment, the executable file is transferred to a host web site, where the file is unpackaged as described below and made available to recipients over the Internet or some other communication network. In that situation, the recipient need not unpack the presentation on their desktop; rather, the unpackaged presentation may be streamed to the recipient slide-by-slide on an on-demand basis.

In the case where the executable file is delivered directly to the recipient, operation begins at step 120, with the recipient selecting the executable file, for example, by double clicking on an appropriate icon on the recipient's display. Once the recipient selects the executable file, operation proceeds to step 122, and the executable code in the file automatically runs and scans the data in the output file until it encounters the first starting block flag. Next, the executable code determines the identity of the data contained in the first block, by reviewing the identification information stored in the block during the packaging process.

At query block 124, if the block is determined to be the package identification block, then operation proceeds directly to query block 146 to scan the data for the next block in the file. The package identification block is not processed by the executable code during the unpackaging process. If the block is determined to not be the package identification block, then operation proceeds to query block 126, and the executable code determines whether the block contains unpackaging directory information. If so, then operation proceeds to step 128, and the executable code reads the information contained in the block to determine the full path name of the output directory and subdirectories in which to store the files expanded during the unpackaging process. The code then creates all of the necessary directories and subdirectories into which the expanded files will be stored. Operation then proceeds to query block 130, and the executable code determines whether the directory into which the files will be saved is a temporary directory. If not, operation proceeds to query block 146. If in fact the directory is a temporary directory, then operation

proceeds to step 132, and a registry entry is created to control the clean-up program to be executed the next time the recipient logs in to their machine. Operation then proceeds to query block 146.

If at query block 126 the data block is determined to not be a directory information block, then operation proceeds to query block 134, and the executable code determines whether the block is a compressed file block. If it is, then operation proceeds to step 136, and the file name for that file is read from the block and concatenated with the destination directory. The executable code then determines whether a corresponding subdirectory exists and, if not, the subdirectory is created and opened. The length of the compressed file is determined, and if the data needs to be decompressed, it is decompressed and written to the destination directory. Operation then proceeds to query block 146.

If at query block 134 the block is determined to not be a compressed file, then at query block 138 the code determines whether the block contains the clean-up program. If so, operation proceeds to query block 140, and it is then determined whether the clean-up program is needed or not, by checking the machine's temporary directory to determine whether a copy of the program is already resident on the machine. If so, operation proceeds to query block 146. On the other hand, if there is no resident copy of the program, operation instead proceeds to step 142, and the clean-up program is decompressed to an executable file in a temporary directory, such as the Windows temporary directory. Operation then proceeds to query block 146.

If the block does not contain the clean-up program, then operation proceeds to step 144, and the executable code determines

that the block contains the auto-start file information, and the code saves the path information of the auto-start file for future use. Operation then proceeds to query block 146.

At query block 146, the executable code determines whether there are additional blocks to be unpackaged. If so, the code reads the identification information of the next block at step 148, and operation then proceeds back to query block 124 to determine the block type.

If at query block 146 it is determined that there are no more blocks to be unpackaged, then operation proceeds to query block 150, and the code determines whether there is a file designated as the auto-start file, by checking for auto-start path information. If there is an auto-start file, then operation proceeds to step 152, and the corresponding file is opened to begin the presentation.

Where the packaged presentation is transferred to an ASP host, the host is programmed to override the auto-start data and the destination directory information. The host preferably includes codes that investigate the package identification information to ensure that the executable file was generated by a known, trusted source, and not by some unknown entity that might be transmitting a virus or other undesirable content. Once the identity of the author is verified, the package is then unpackaged to a destination directory as determined by the host, and the host stores the presentation until a user accesses the host and requests the presentation. The host can then stream the presentation to the user in any suitable, well known manner as described above.

Referring now to FIG. 6, playback of the created presentation is described in more detail. Initially, the presentation is

obtained by an intended recipient, either on a disk or other storage medium, as an email attachment, or transferred over a computer network, such as over the Internet. Then, at step 200, the recipient opens the file by clicking on a suitable icon representing the presentation, or in any other well-known manner. As described above, when the bundle is extracted by the recipient opening the self-executing file, one of the sub-files is designated as the initial file to be opened, as in conventional in self-executing files. In addition, the extracted files are written to the appropriate destinations for subsequent retrieval during the presentation.

At step 202, the presentation is displayed to the recipient, with the slides being sequentially displayed along with any corresponding audio clips for the respective slides. In addition, a table of contents is displayed on the display, and includes the title of each slide in the presentation (FIG. 13). The titles may be selected by the recipient to advance the presentation to the corresponding slide. At query block 204, the recipient's machine (hereinafter "the machine") determines whether the recipient has requested a search for a particular text string within the presentation. In one embodiment, such a request is made by entering the text string in an appropriate box on the screen and then clicking on a corresponding button on the screen (see FIG. 13). If the recipient does not request a search for text, then operation proceeds to query block 205, and the machine determines whether the recipient has made a selection of one of the slide titles in the table of contents. If so, the presentation is advanced to the selected slide, and that slide is displayed along with the corresponding portion of the concatenated audio file, at

step 206. A time-based index into the concatenated audio file is provided, and instructions are transmitted to reposition an audio player to the appropriate point in the audio file based on the time-based relationship between the slide and the audio file. Operation then proceeds back to query block 204. If the recipient does not select any of the titles in the table of contents, then operation instead proceeds to step 207, and the presentation continues to completion, and operation then terminates.

If, on the other hand, the recipient makes a request for a text search, operation proceeds to step 208, and the recipient enters their text string, which is received by system 20. At step 209, the machine accesses the meta data file that was included in the self-executing file and that contains all of the meta data information necessary for playback, including the text that appears on the individual slides. At step 210, the machine compares the text string with the text contained in the data file. At query block 212, the machine determines whether a match exists. If not, then at step 214 the recipient is notified that there is no match for the entered text string. Operation then proceeds back to step 204, and the recipient may enter another text string to be searched.

If there is a match between the text string and the text in the data file, operation proceeds to step 216, and the machine retrieves the appropriate GIF file and determines the corresponding position within the single audio file and presents the screen slide and corresponding portion of the audio file to the recipient. There are many well-known ways in which system may determine the appropriate GIF file to retrieve. For example, an association

table may be maintained to link the text of each slide with a corresponding GIF file.

It will be apparent that a recipient may request that a search be conducted before the presentation begins, during the presentation, or after the presentation is completed.

Once the slide and corresponding portion of the audio file are presented to the recipient, the presentation may be continued, sequentially from the selected slide to the end of the presentation, operation may terminate, or operation may proceed back to query block 204 to allow the recipient to search for another text string.

Referring to FIG. 7, the operational flow of event handling software included in one illustrative embodiment of the invention is shown in detail. The event handling software controls the navigation through a presentation at the recipient's machine. The software relies on a set of event data that contains all of the information relating to the timing of the presentation. For example, the event data includes information concerning the start and stop times of each slide page, of each of the clips in a clip list, and of each audio clip. In addition, the event data may include information concerning when the presentation should automatically pause or skip to a new position.

Operation of the event handling software begins at step 220, and the presentation begins, for example, when the self-executing file is opened. The presentation then begins to be displayed, for example, at the beginning of the presentation. At step 222, the recipient's machine is controlled by the event handling software to determine the time of the current position of the presentation. For example, when the presentation is launched from the beginning,

the software determines that the time is either at time zero or only a few milliseconds. At step 224, the time is compared with the event data for the respective slides, and the slide whose time is either equal to or less than the determined time is selected and displayed in the slide window on the recipient's machine, at step 226.

At step 228, the event handler software calculates a timeout based on the current time of the presentation and the stop time of the slide being displayed. At step 230, the event handler sets a clock to fire an event trigger upon reaching the timeout.

At query block 232, the event handler determines whether the event trigger has fired. If so, then operation proceeds to step 234, and the event trigger initiates a polling process to repeatedly (e.g., every 200 milliseconds) determine the current position of the presentation. At step 236, the current position is compared with the event data for the respective slides. At step 238, the slide whose time is 1) equal to or 2) less than, and closest in time to, the current time is selected and the slide window is updated with the selected slide. At step 240, the event handler calculates a timeout based on the current time and the stop time of the slide, and resets the clock to fire an event trigger upon reaching the new timeout. Operation then proceeds back to query block 232.

On the other hand, if at query block 232 it is determined that the event trigger has not yet fired, operation instead proceeds to query block 242, and the event handler determines whether the presentation has been either paused or stopped by the recipient, for example, by clicking on a pause or stop button, or by selecting another slide for presentation. If not, operation loops back to

query block 232. If the presentation has been paused or stopped, then operation proceeds to step 244, and the presentation is stopped. Also, the event trigger clock is cleared. Operation then proceeds to query block 246, and the event handler determines whether the presentation has been restarted, for example, by the recipient pressing a start button, or repressing the pause button. If the presentation has been restarted, operation proceeds back to step 222 to determine the time of the new position of the presentation.

It will be understood that when the recipient selects a new slide for display, the presentation is automatically restarted at step 246, and operation then proceeds back to step 222.

The above description of the event handler deals primarily with the screen slides themselves. However, it will be apparent to those skilled in the art that the event handler would perform the same functions for synchronizing the display of textual information, audio clips, and the like.

Referring now to FIGS. 8 through 13, there is shown one illustrative embodiment of various interface screens generated by system 20 to facilitate creation of a multi-media presentation by an author. As shown in FIG. 8, system 20 preferably displays each of the generated screen slides 21 with the accompanying text for each. In addition, a user interface window 320 is provided to guide an author through the process of creating a multi-media presentation. The user interface navigates the author through the steps of initializing the system 20, recording narration for the respective slides 21, previewing a presentation, and packaging the final presentation. The user interface 320 includes a Cancel button 322, a Back button 324, a Next button 326, and a Finish

button 328 to allow the author to control navigation through the process.

FIG. 9 shows a user interface 330 which may be used by an author to calibrate the microphone. The calibration of the microphone is performed by providing a volume control 332 that can be manipulated by the author to adjust the volume of the microphone. The range of control spans from 0 to 100%. The screen preferably displays the control level at which the microphone is set in a display window 334. The level can be increased and decreased by manipulating a slide bar 335. To test the volume level to determine whether it is acceptable, a control panel 336 is provided that enables the author to record and then play back a test clip to determine if the volume level of the microphone is acceptable. Control panel 336 preferably has a record button 338, play button 340 and stop button 342. To test the microphone, the author clicks the record button 338 and speaks into the microphone. When the author is finished recording, the stop button 342 is pressed. The author can listen to the recording by clicking the play button 340. When the volume level has been set to a desirable level, the author can click the NEXT button 326 to continue with the creation of a presentation. If, at any time, the author wants to return to a previous window to change a setting, the author can do so by clicking the BACK button 324.

FIG. 10 illustrates a user interface 350 that assists the author in narrating a slide. To begin recording on a particular slide, RECORD button 352 is clicked. The author can stop the recording at anytime by clicking on STOP button 354. The author can also pause the recording by pressing PAUSE button 356. The author can play back the recording by clicking on PLAY button 358

to ensure that the audio clip is audible and clear. If the content is not as desired, the author can override the previous audio clip by recording over it. In addition, interface 350 includes Previous and Next Slide Buttons 357 and 359, which allow the author to navigate through the respective slides 21. Thus, the present system allows the author to record the slides out of order, giving the author greater independence in working on the slides in the order desired by the author and, not necessarily, in the order that the slides appear in the presentation material.

When finished narrating a slide, the author can proceed to the next slide by clicking on NEXT slide button 359, or to a previous slide by clicking on PREVIOUS slide button 357. The activation of either of those buttons will automatically terminate the narration for that slide. Thus, it will be apparent that user interface 350 allows the author to record narration for the respective slides in any order. The audio for each slide is independent of the other slides, and thus, the audio for the slides can be recorded in an order independent of the order of the slides.

The interface 350 preferably includes a slide time meter 364 that displays the length of the audio for each slide and a total time meter 366 that displays the length of the audio for the entire presentation. This allows the author to keep track of the length of the entire presentation as the author is recording the audio for each slide.

In addition to providing information regarding the length of the audio recordings on interface 350, the length of the various audio recordings are also provided as time meter displays 367 under each slide. This enables the author to view the audio recording length for all of the slides simultaneously.

In one embodiment, system 20 requires that narration be recorded for each slide, with the length of the recording determining the length of time for which the slide will be displayed. Alternatively, if narration is not recorded for a particular slide or slides, a default display time may be assigned to that slide, such as 4 seconds or some other amount of time. Or, system 20 may query the author to enter a default time for a particular slide for which no narration has been recorded.

FIG. 11 shows a user interface 360 that allows an author to preview and/or package a finished presentation. Interface 360 includes a Preview button 362, which if clicked causes system 20 to launch the presentation immediately, so as to allow the author to preview the presentation before completion. The presentation material can be packaged so as to be optimized for sound quality or optimized for size. The author makes their selection by clicking on one of two windows 365 and 367. Clicking on the preview button causes the processor 24 to carry out the concatenating, compressing, and export processes so as to have the data in a format suitable for presentation within the web browser. In addition, the preview function causes the processor to launch the auto-start file in the web browser automatically, as would be done by the unpackaging process described above.

FIG. 12 depicts a user interface 370 to allow the author to select a file name under which the presentation will be stored. In a preferred embodiment, optimizing the presentation for size provides a compression of about 6500 bits per second, whereas optimizing for sound quality provides a compression of about 8500 bits per second. In the embodiment shown in FIGS. 9 and 10, the user interfaces 360 and 370 only allow the author two choices for

optimization, namely, optimization for sound quality and optimization for size. The system, however, can be adapted to provide additional optimization choices to the author. For instance, if authors desire a different level of audio, e.g., audio at a high bandwidth to facilitate high quality CD recording, the system can be adapted to provide additional optimization choices to the author. The optimization for sound quality and size are preferable for presentation materials that mainly contain audio consisting of the spoken word. In the case of audio containing spoken word, the frequency response is small and telephone-like, monaural quality is the audio level that is required to be provided by the system.

User interface 370 assists the author in saving the presentation material. In one illustrative embodiment, system 20 keeps track of the last used directory 374 and displays the directory name in the "save file as" window 372. That directory is concatenated with the current name 376 of the presentation material to create the file name for the presentation. For instance, user interface 370 displays a directory of "D:\MyDocuments\" and a file name of "testing of hotfoot.exe." The presentation material is thus saved in the specified directory under the specified file name. User interface also includes a Browse button 378 to allow an author to select another path in which to store the presentation. In yet another embodiment, system 20 inserts a default directory into window 372, rather than the last-used directory.

As is described above, the creation of the playlist object allows the system of the present invention to be compatible with numerous other applications because the playlist object simplifies, generalizes, and abstracts the process of data storage, post-

processing, and transmission. Thus, the playlist can be reused in other applications, while the playlist ensures the referential integrity, provides object modeling, provides consistency between what is done in the present system with other applications, which allows efficient and compatible data sharing between different applications.

The system loops through each slide, extracts the text of the slide, and removes the megaphone object from each slide and exports it as a .gif file. The exportation of the slide object as a .gif file can be done by using Microsoft PowerPoint™. Auto-numbering is automatically turned off by the system so as not to get a "1" at the bottom of each page. The duration of the audio file for each file is measured and, if the slide has no audio duration, a duration of four seconds is assigned. The reason for assigning a four second duration is that the recipient's application is responsible for advancing the slides. If there is no audio recorded for the slide, the slide will be shown for four seconds and then is automatically advanced to the next slide.

The corresponding audio clips for the selected slides are also retrieved and saved as .wav files. The .wav files are concatenated and integrated together. The .wav files can also be converted to other digital media continuous stream formats, such as MP3. It will be apparent to those skilled in the art that by concatenating the files together, prior to encoding into another digital sound format, the notion of independent audio linked to slides is transformed into a coherent and unchangeable presentation format. The coherent format allows the recipient to jump from slide to slide randomly and out of order but does not allow the recipient to

modify or change the audio or the slides. Therefore, the intention of the publisher is preserved.

In one illustrative embodiment, the .wav file is converted to a Windows Media file and the bit rate is set to the bit rate previously determined by choosing optimization for size or sound quality. The Windows Media file is a single media file that can be attached to the playlist object.

The author has the option of choosing which slides will be included in the presentation package, with such selections being done in any suitable manner, such as by clicking on a window next to each slide, through a drop-down menu, or in any other suitable manner. For instance, the author can chose slides 1, 3 and 7 and those become packaged in the presentation. Or the author can unselect 3 and select another slide, for instance slide 8. The fact that the audio is tied to a slide, as opposed to across the entire presentation, allows the author to chose the order and the slides to be included in the presentation. System 20 extracts the necessary information from the selected slides only when packaging the presentation.

The packaged presentation is then subjected to the above-described export process, in which the necessary information is extracted from the playlist object and put into a template-defined format suitable for display within a browser. In one embodiment, system 20 stores the title of each slide in a suitable file for creating the table of contents, and strips all of the text from each slide and stores the text in another file, as is described above. The information proceeds to the packaging process which, as described in detail above, takes the files and subdirectories,

including the media file and the slides, and creates an executable file.

The packaging process gathers a relatively large number of files, for example as many as 30 to 40 individual files, that are created by system 20 when a slide presentation is created. There may also be other files, such as external files, that also need to be included in a presentation. The packaging process gathers the external files along with the presentation files and creates a single, simplified package. In a preferred embodiment, the packaging and unpackaging functions are completed without interfacing with the author. One of the files in the package is designated as the file to be opened when the package is extracted. A marker is also placed in the executable file that identifies the file as one that is compatible with the application of the present system.

Referring now to FIG. 13, there is shown a portion of the presentation, for example when an author has selected the Preview option. The presentation includes a table of contents 400 that includes the title for each of the slides. Each title may be clicked on to immediately display the corresponding slide. In addition, the presentation displays one of the slides 21. Moreover, the presentation includes a window 402 into which the recipient may enter a text string to be searched for. A Search button 404 is provided and may be selected by the recipient to begin a search for text, as is described above in more detail. The search results are displayed in a portion of the screen 406. In one embodiment, if there is a match, the slide that contains the matched text is automatically retrieved and displayed, along with the corresponding audio clip. Alternatively, the results may be

displayed for the recipient, with the recipient then selecting one of the slides for display. The display preferably also includes a Play button 408, Pause button 410, and running indicator bar 412 to indicate the current state of the presentation.

While the above description has focused primarily on a presentation consisting of screen slides and corresponding audio, it will be readily understood by those having ordinary skill in the art that the various aspects of the present invention have utility in connection with other data-presenting formats. For example, the present invention may be used to export, package, unpackage, and display presentations consisting of spread sheets and corresponding audio clips for one or more of the respective cells in the spread sheet, word processing documents with corresponding audio clips for the various pages of the document, charts, screen capture scenarios, and the like. It will be understood that the various aspects of the invention, including the packaging process, export process, unpackaging process, and event handling process, have utility in connection with various different types of information, and that the screen slide presentation described herein is but one illustrative embodiment of the utility of the invention. Thus, the export process, packaging process, unpackaging process, and event handling process can each be used in connection with various types of information.

By way of example, in the case of a spreadsheet, the present invention may be used to add audio clips (e.g., voice comments) to particular cells within the spreadsheet, in a similar manner to the audio clips being associated with the respective screen slides. The invention will concatenate the audio clips into a file, compress the file, and assemble the compressed file, spreadsheet

graphics file, and the other files described above into a single, executable file.

In addition, a word processing document can be associated with one or more audio clips, wherein the audio clips are linked to particular pages, chapters, paragraphs, and the like, of the document. The export process, packaging process, and unpackaging process are carried out in much the same way as in the case of the screen slide presentation.

As used herein, the term "digital asset" is defined as a collection of data that is presented to a viewer, such as a screen slide, a video clip, an audio clip, a spreadsheet, a word processing document, and the like.

As described above, in the case of a presentation consisting of plural screen slides, the text from each screen slide is preferably extracted and stored in a data file, with such data being available for searching during subsequent presentation. Where the invention is dealing with other types of digital assets, some other type of data may be extracted from the respective assets for use in intelligently navigating through the presentation. For example, in the case of a video signal, closed captioning information may be extracted from the video and stored in the data file. Alternatively, selected video frames may be extracted and stored, such as transitory frames or other important frames. Moreover, in the case of audio data, key words may be extracted from the audio and stored in the data file.

In addition, while the above description focuses primarily on audio clips being linked to respective digital assets (e.g., screen slides, video clips, and the like), the audio clips can be replaced with any continuous stream media format, such as video, audio and

video, animations, telemetry, and the like. Thus, the invention has utility with any continuous stream media format, and it will be understood by those skilled in the art that audio clips are but one example thereof.

From the foregoing, it will be apparent to those skilled in the art that the system and method of the present invention provide for creating a multi-media presentation in a user-friendly, efficient manner. The system also provides a presentation that can be searched to arrive at desired subject matter.

While the above description contains many specific features of the invention, these should not be construed as limitations on the scope of the invention, but rather as exemplary embodiments thereof. Many other variations are possible. Accordingly, the scope of the invention should be determined not by the embodiments illustrated, but by the appended claims and their legal equivalents.

WHAT IS CLAIMED IS:

1. A method for processing a plurality of files to create a single, executable file, comprising:

creating a single output file;

copying executable code to the output file;

writing destination information to the output file to designate the destination directory of the executable file;

writing plural blocks of data to the output file, each block containing identification information and corresponding data;

writing a block containing a clean-up program to the output file if the destination information corresponds to a temporary file; and

writing auto-start file information to the output file to designate a file to be opened when the output file is executed, if an auto-start file is specified by an author.

2. The method of claim 1, wherein writing plural blocks comprises writing the corresponding data in a compressed format.

3. The method of claim 1, wherein writing the blocks comprises writing a block start flag for each block.

4. The method of claim 1, further including receiving user input to identify the destination directory.

5. The method of claim 1, further including writing a source-identifying block to the output file to indicate the source of the file.

6. The method of claim 1, further including:

running the executable code to identify one of the blocks;

processing identification information contained in the block to determine the contents of the block;

reading the data in the block and creating a corresponding directory if the block is a destination directory block;

decompressing the data in the block and writing the decompressed data to an appropriate directory if the block is a compressed file block;

writing the data in the block to a temporary directory if the block contains a clean-up program; and

saving the information in the block if the information contains auto-start path information.

7. The method of claim 6, further including:

beginning a display of data at a preselected position;

determining a current position of the display;

comparing the determined position with a set of event data for the respective digital assets;

displaying one of the digital assets based on the comparison of the position with the event data;

calculating a timeout based on the determined position and the event data;

setting a clock to fire upon reaching the timeout;

initiating a polling process when the clock fires to determine the position of the display;

displaying a different digital asset based on a comparison of the determined position with the event data; and

calculating a new timeout and resetting the clock to fire upon reaching the new timeout.

8. The method of claim 6, wherein reading the data further comprises determining whether the data corresponds to a temporary directory, and creating an entry to execute the clean-up program if the data corresponds to a temporary directory.

9. The method of claim 6, further including determining whether the clean-up program is needed, and writing the clean-up program to the temporary directory only if it is needed.

10. The method of claim 6, further including determining, after the blocks have been written to the appropriate destinations, if an auto-start file is specified, and opening the auto-start file if it is specified.

11. The method of claim 6, further including processing a source-identifying block to verify the source of the executable file.

12. A method of unpackaging and launching an executable file, comprising:

providing the executable file including executable code and a plurality of blocks of data;

running the executable code to identify one of the blocks;

processing identification information contained in the block to determine the contents of the block;

reading the data in the block and creating a corresponding directory if the block is a destination directory block;

decompressing the data in the block and writing the decompressed data to an appropriate directory if the block is a compressed file block;

writing the data in the block to a temporary directory if the block contains a clean-up program; and

saving the information in the block if the information contains auto-start path information.

13. The method of claim 12, wherein reading the data further comprises determining whether the data corresponds to a temporary directory, and creating an entry to execute the clean-up program if the data corresponds to a temporary directory.

14. The method of claim 12, further including determining whether the clean-up program is needed, and writing the clean-up program to the temporary directory only if it is needed.

15. The method of claim 12, further including determining, after the blocks have been written to the appropriate destinations, if an auto-start file is specified, and opening the auto-start file if it is specified.

16. The method of claim 12, further including processing a source-identifying block to verify the source of the executable file.

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SYSTEM FOR MANIPULATION AND INTERACTION OF TIME-BASED MIXED MEDIA FORMATS

ABSTRACT OF THE DISCLOSURE

A system and method for efficiently creating a multi-media presentation, as well as allowing for searching through the presentation to retrieve and display desired subject matter within the presentation. The invention provides software that allows a user to record audio clips for one or more of the screens of the presentation, in any order, and in various manners. In addition, the invention maintains a searchable text file to allow a user to find desired subject matter within the presentation, and to display the corresponding screen(s).

FIG. 1

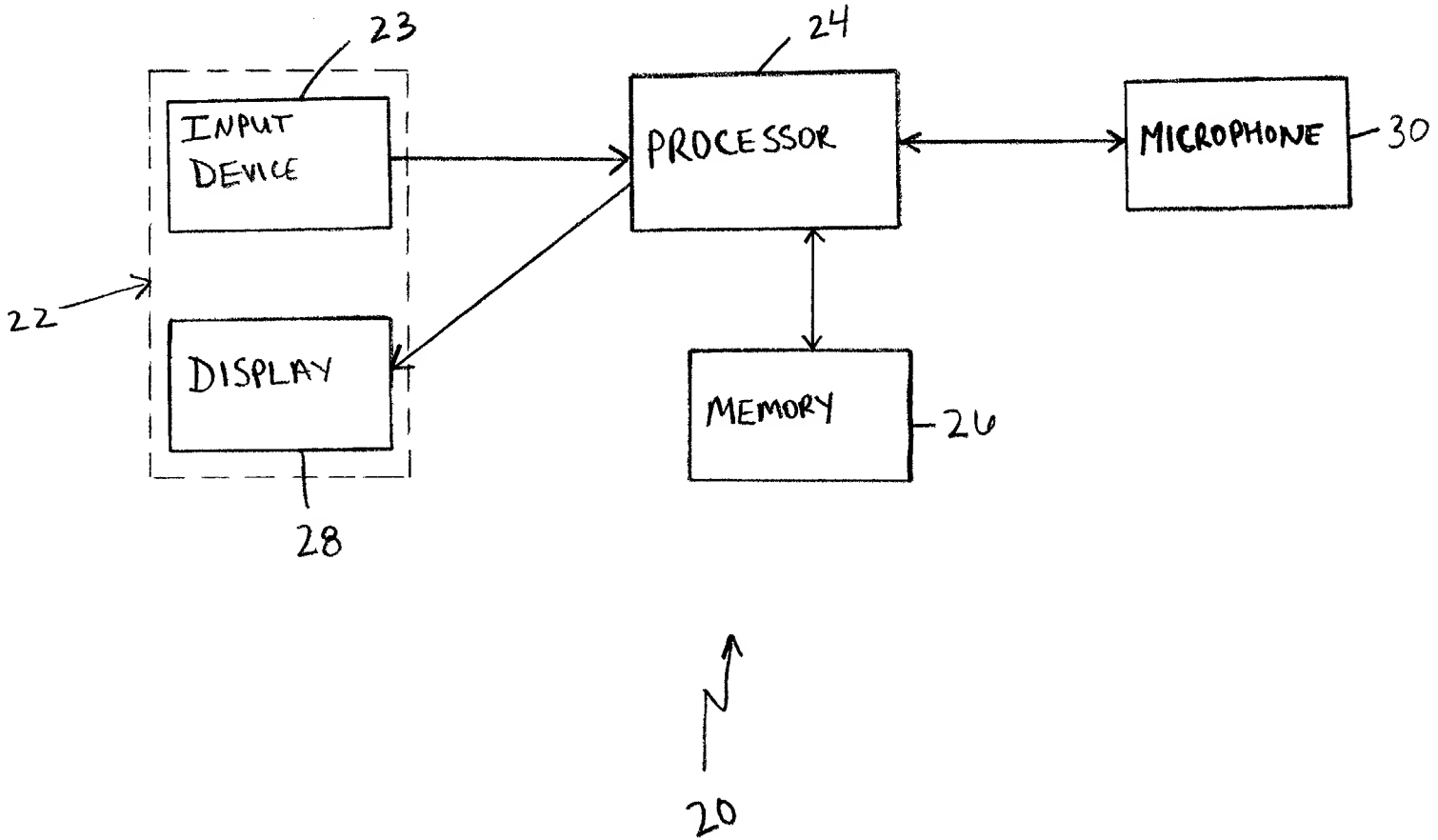

23
24
INPUT DEVICE
PROCESSOR
MICROPHONE
30
22
DISPLAY
MEMORY
26
28
20

FIG. 2

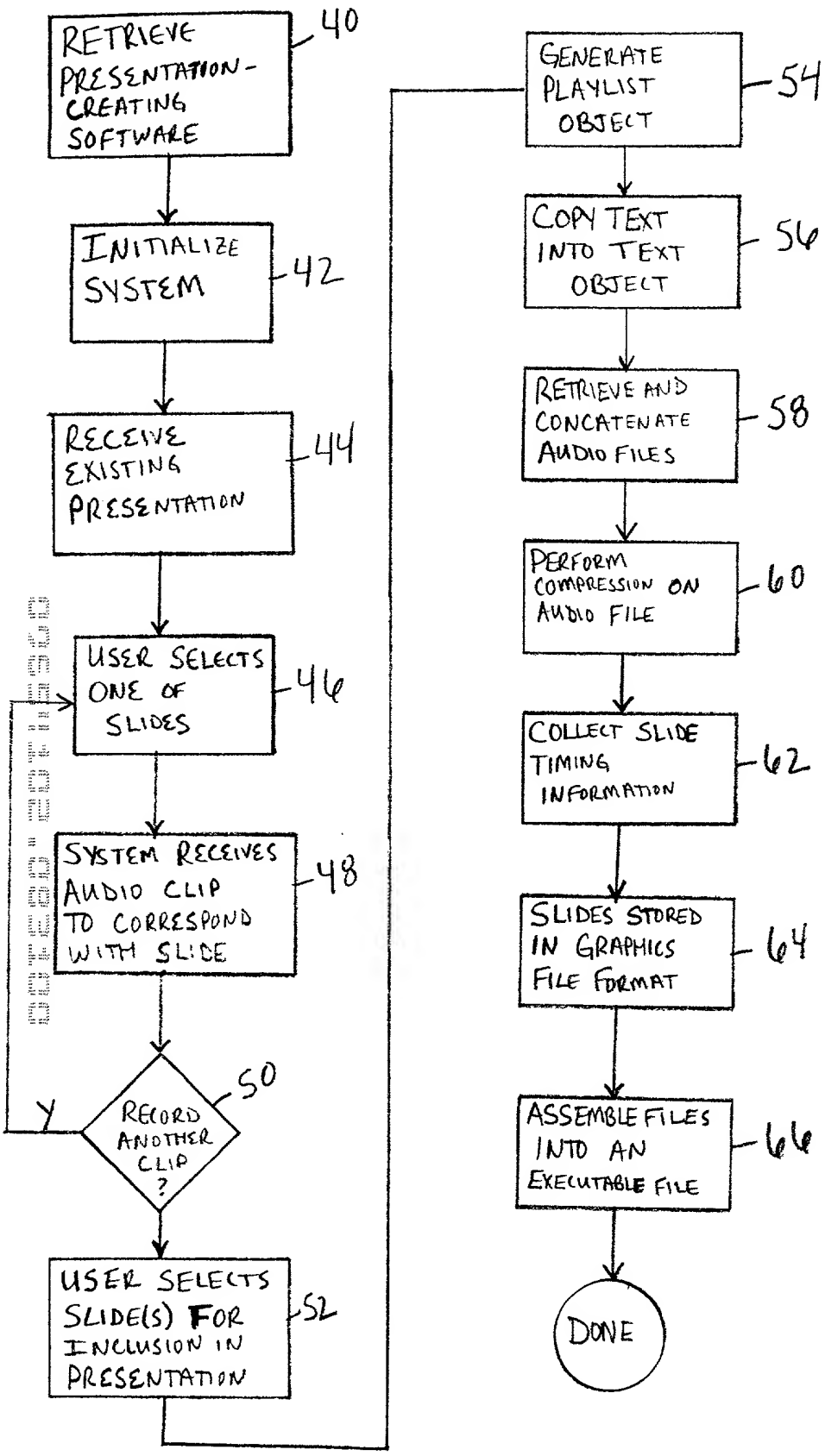
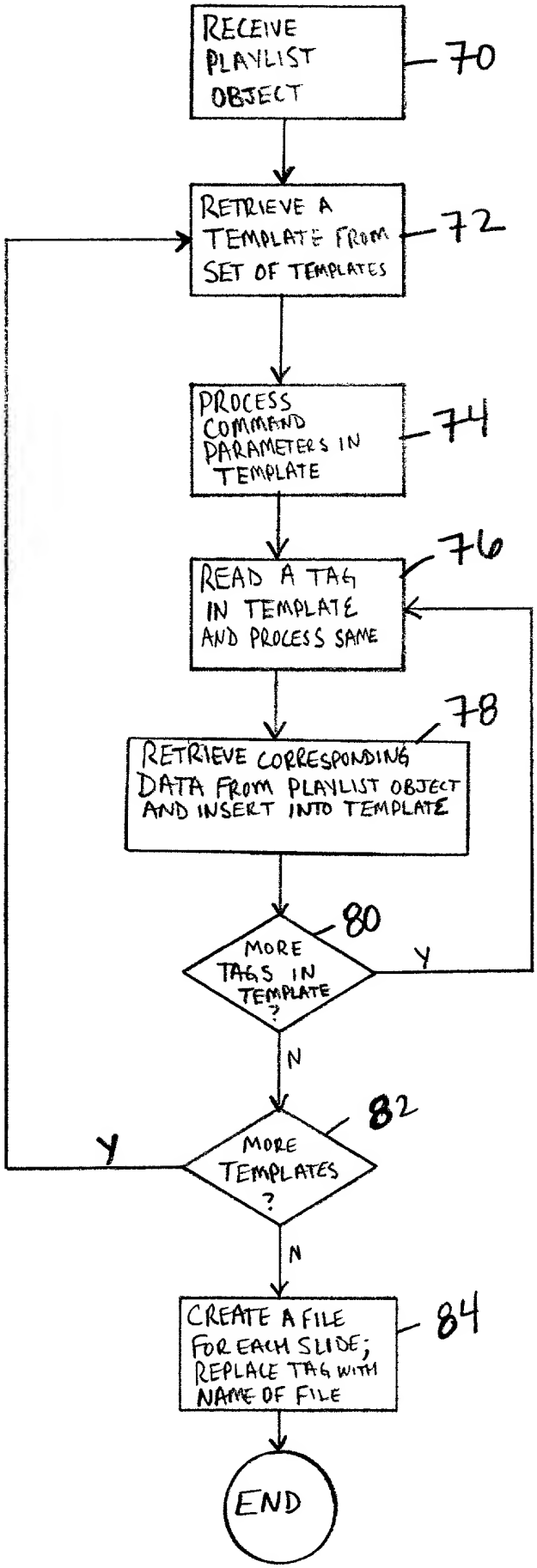

RETRIEVE PRESENTATION-CREATING SOFTWARE
40
INITIALIZE SYSTEM
42
RECEIVE EXISTING PRESENTATION
44
USER SELECTS ONE OF SLIDES
46
SYSTEM RECEIVES AUDIO CLIP TO CORRESPOND WITH SLIDE
48
RECORD ANOTHER CLIP ?
50
Y
USER SELECTS SLIDE(S) FOR INCLUSION IN PRESENTATION
52
GENERATE PLAYLIST OBJECT
54
COPY TEXT INTO TEXT OBJECT
56
RETRIEVE AND CONCATENATE AUDIO FILES
58
PERFORM COMPRESSION ON AUDIO FILE
60
COLLECT SLIDE TIMING INFORMATION
62
SLIDES STORED IN GRAPHICS FILE FORMAT
64
ASSEMBLE FILES INTO AN EXECUTABLE FILE
66
DONE

FIG. 3


RECEIVE PLAYLIST OBJECT
70
RETRIEVE A TEMPLATE FROM SET OF TEMPLATES
72
PROCESS COMMAND PARAMETERS IN TEMPLATE
74
READ A TAG IN TEMPLATE AND PROCESS SAME
76
RETRIEVE CORRESPONDING DATA FROM PLAYLIST OBJECT AND INSERT INTO TEMPLATE
78
MORE TAGS IN TEMPLATE ?
80
Y
N
MORE TEMPLATES ?
82
Y
N
CREATE A FILE FOR EACH SLIDE; REPLACE TAG WITH NAME OF FILE
84
END

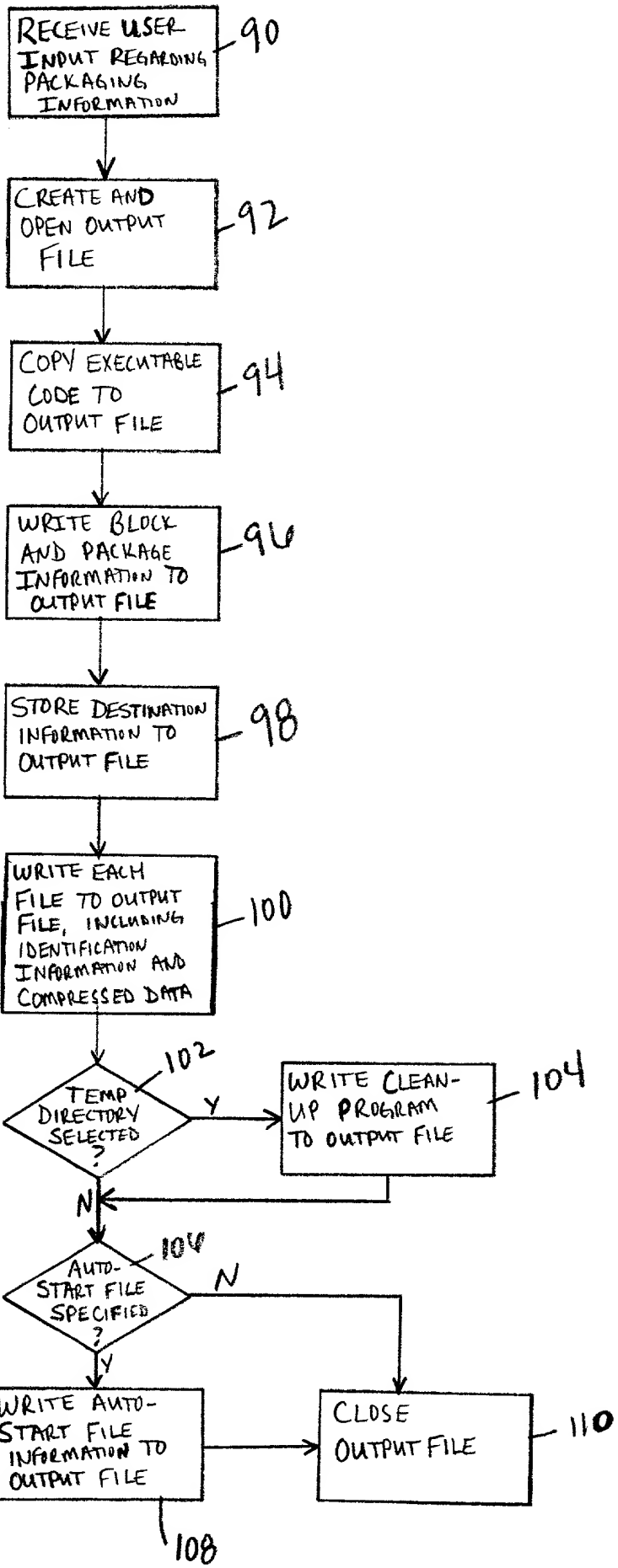

RECEIVE USER INPUT REGARDING PACKAGING INFORMATION
90
CREATE AND OPEN OUTPUT FILE
92
COPY EXECUTABLE CODE TO OUTPUT FILE
94
WRITE BLOCK AND PACKAGE INFORMATION TO OUTPUT FILE
96
STORE DESTINATION INFORMATION TO OUTPUT FILE
98
WRITE EACH FILE TO OUTPUT FILE, INCLUDING IDENTIFICATION INFORMATION AND COMPRESSED DATA
100
TEMP DIRECTORY SELECTED ?
102
Y
WRITE CLEAN-UP PROGRAM TO OUTPUT FILE
104
N
AUTO-START FILE SPECIFIED ?
106
N
Y
WRITE AUTO-START FILE INFORMATION TO OUTPUT FILE
108
CLOSE OUTPUT FILE
110

FIG. 4

FIG. 5

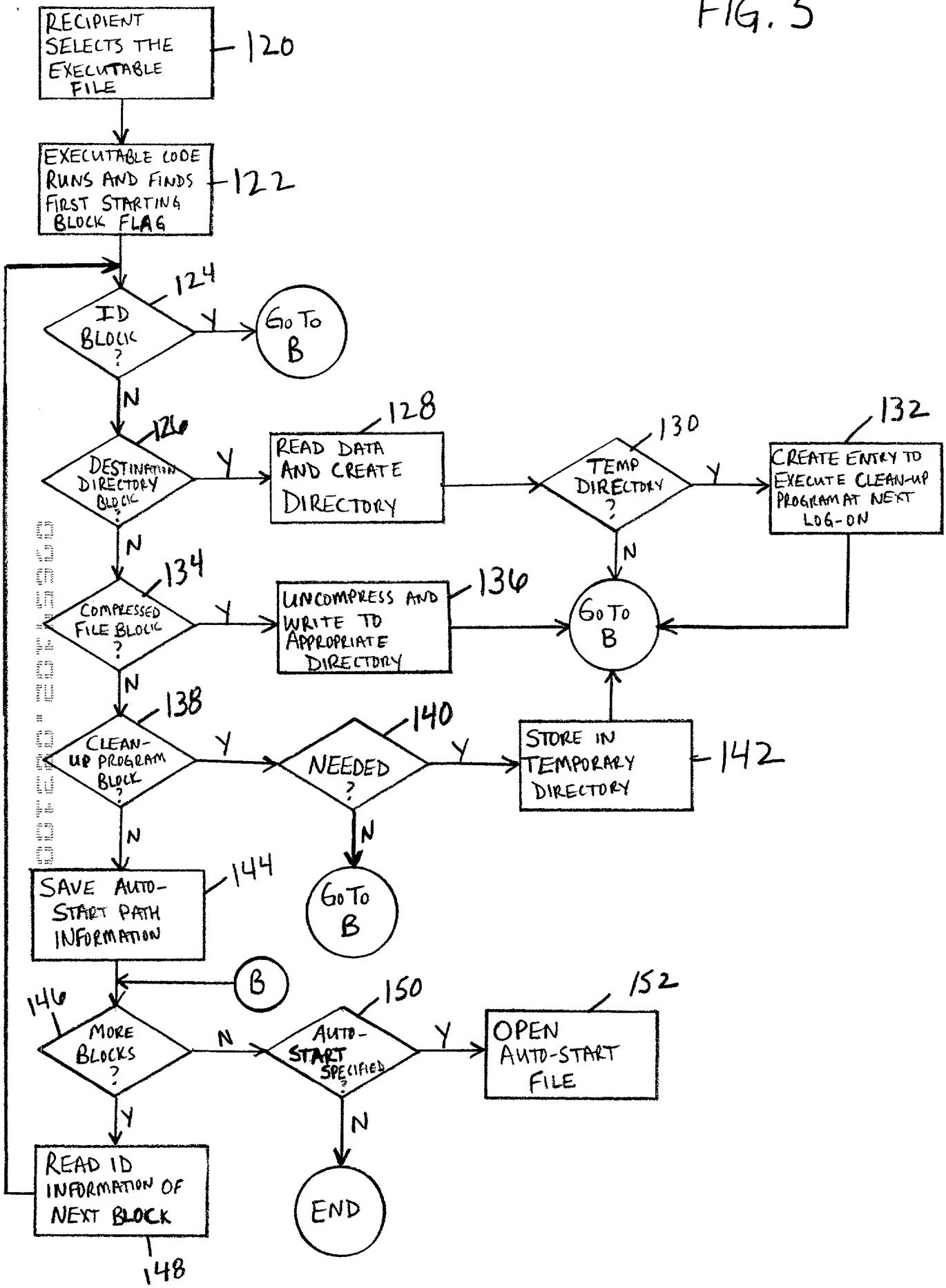

RECIPIENT SELECTS THE EXECUTABLE FILE
120
EXECUTABLE CODE RUNS AND FINDS FIRST STARTING BLOCK FLAG
122
124
ID BLOCK ?
Y
GO TO B
N
126
DESTINATION DIRECTORY BLOCK ?
Y
128
READ DATA AND CREATE DIRECTORY
130
TEMP DIRECTORY ?
Y
132
CREATE ENTRY TO EXECUTE CLEAN-UP PROGRAM AT NEXT LOG-ON
N
134
COMPRESSED FILE BLOCK ?
Y
136
UNCOMPRESS AND WRITE TO APPROPRIATE DIRECTORY
GO TO B
N
138
CLEAN-UP PROGRAM BLOCK ?
Y
140
NEEDED ?
Y
142
STORE IN TEMPORARY DIRECTORY
N
N
144
SAVE AUTO-START PATH INFORMATION
GO TO B
B
146
MORE BLOCKS ?
N
150
AUTO-START SPECIFIED ?
Y
152
OPEN AUTO-START FILE
Y
N
READ ID INFORMATION OF NEXT BLOCK
148
END

FIG. 6

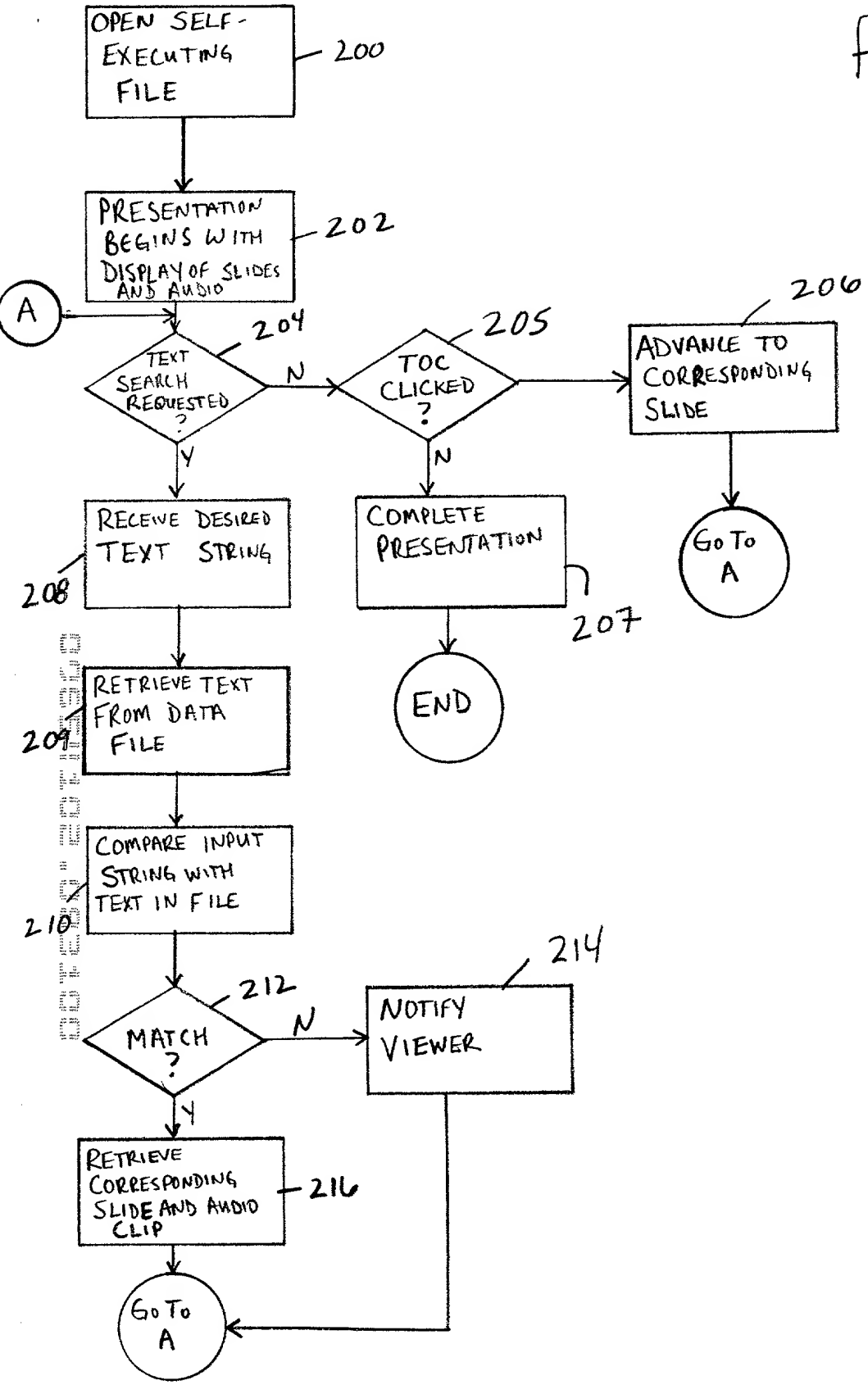
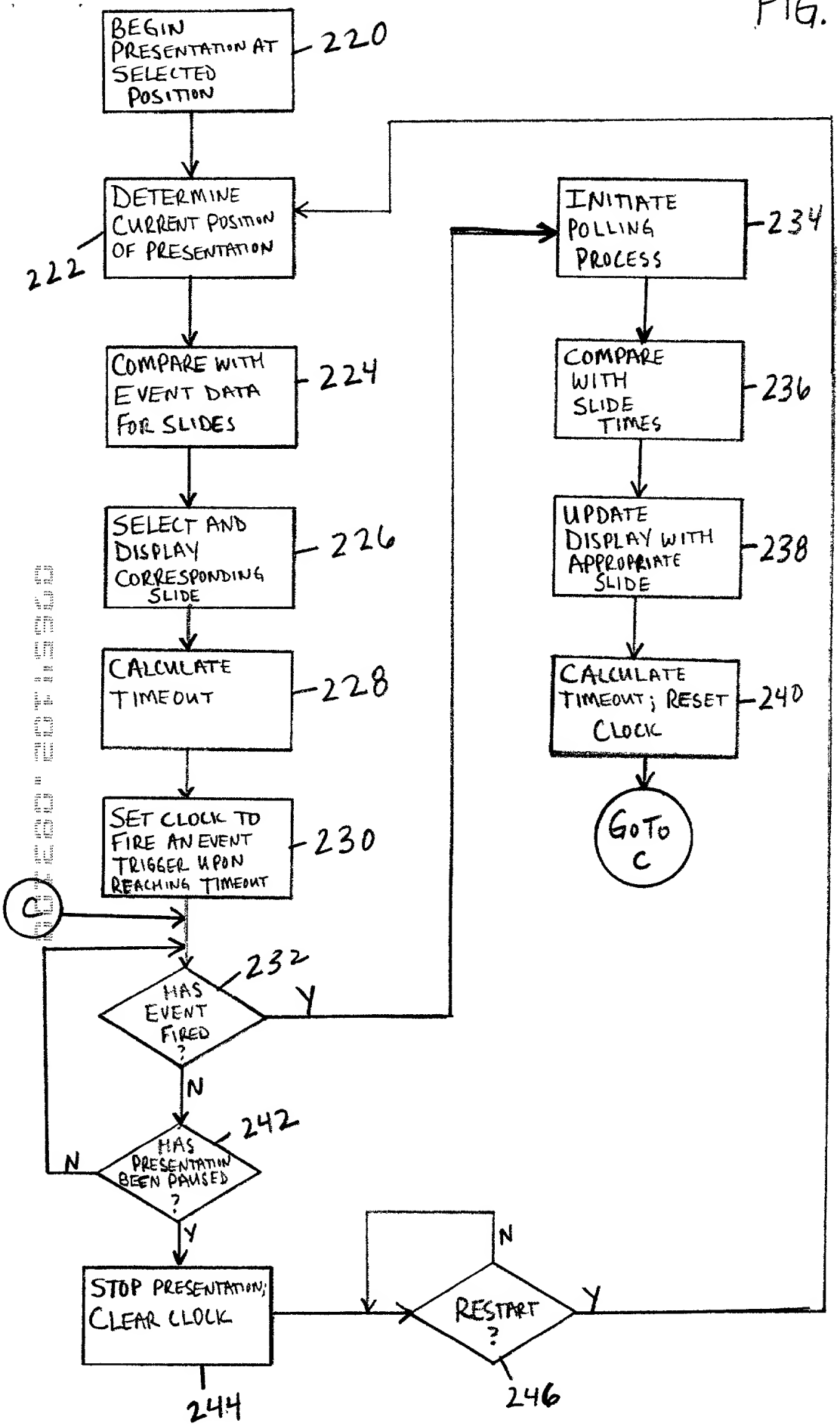

OPEN SELF-EXECUTING FILE
200
PRESENTATION BEGINS WITH DISPLAY OF SLIDES AND AUDIO
202
A
TEXT SEARCH REQUESTED ?
204
N
Y
TOC CLICKED ?
205
N
ADVANCE TO CORRESPONDING SLIDE
206
GO TO A
RECEIVE DESIRED TEXT STRING
208
COMPLETE PRESENTATION
207
END
RETRIEVE TEXT FROM DATA FILE
209
COMPARE INPUT STRING WITH TEXT IN FILE
210
MATCH ?
212
N
Y
NOTIFY VIEWER
214
RETRIEVE CORRESPONDING SLIDE AND AUDIO CLIP
216
GO TO A

FIG. 7


BEGIN PRESENTATION AT SELECTED POSITION
220
DETERMINE CURRENT POSITION OF PRESENTATION
222
COMPARE WITH EVENT DATA FOR SLIDES
224
SELECT AND DISPLAY CORRESPONDING SLIDE
226
CALCULATE TIMEOUT
228
SET CLOCK TO FIRE AN EVENT TRIGGER UPON REACHING TIMEOUT
230
C
HAS EVENT FIRED ?
232
Y
N
HAS PRESENTATION BEEN PAUSED ?
242
N
Y
STOP PRESENTATION; CLEAR CLOCK
244
RESTART ?
N
Y
246
INITIATE POLLING PROCESS
234
COMPARE WITH SLIDE TIMES
236
UPDATE DISPLAY WITH APPROPRIATE SLIDE
238
CALCULATE TIMEOUT; RESET CLOCK
240
GO TO C

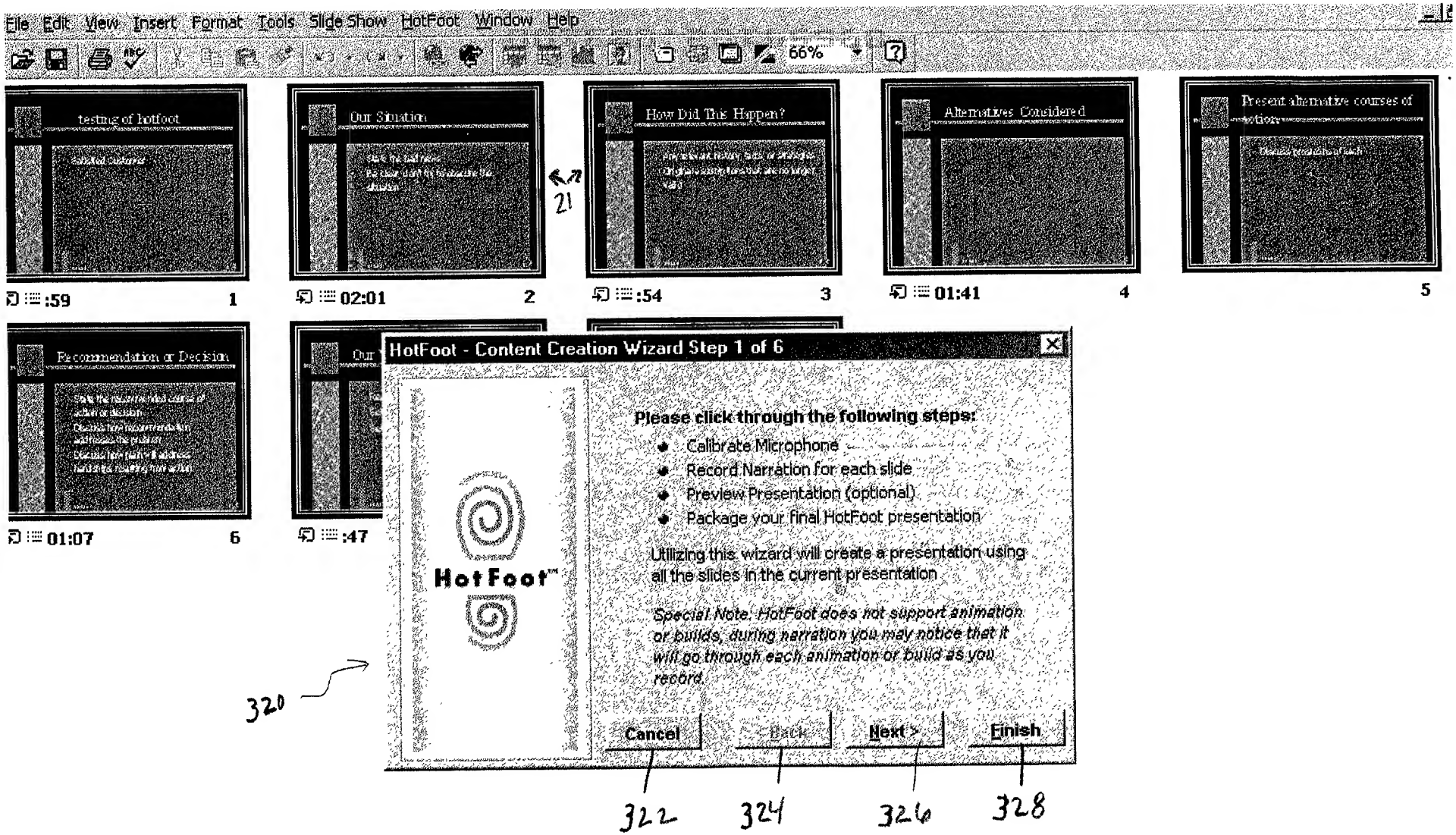

File Edit View Insert Format Tools Slide Show HotFoot Window Help
66%
testing of hotfoot
:59
1
Our Situation
02:01
2
How Did This Happen?
:54
3
Alternatives Considered
01:41
4
Present alternative courses of
5
Recommendation or Decision
01:07
6
:47
HotFoot - Content Creation Wizard Step 1 of 6
HotFoot™
Please click through the following steps:
Calibrate Microphone
Record Narration for each slide
Preview Presentation (optional)
Package your final HotFoot presentation
Utilizing this wizard will create a presentation using all the slides in the current presentation
Special Note: HotFoot does not support animation or builds, during narration you may notice that it will go through each animation or build as you record.
Cancel
< Back
Next >
Finish
21
320
322
324
326
328

FIG. 8

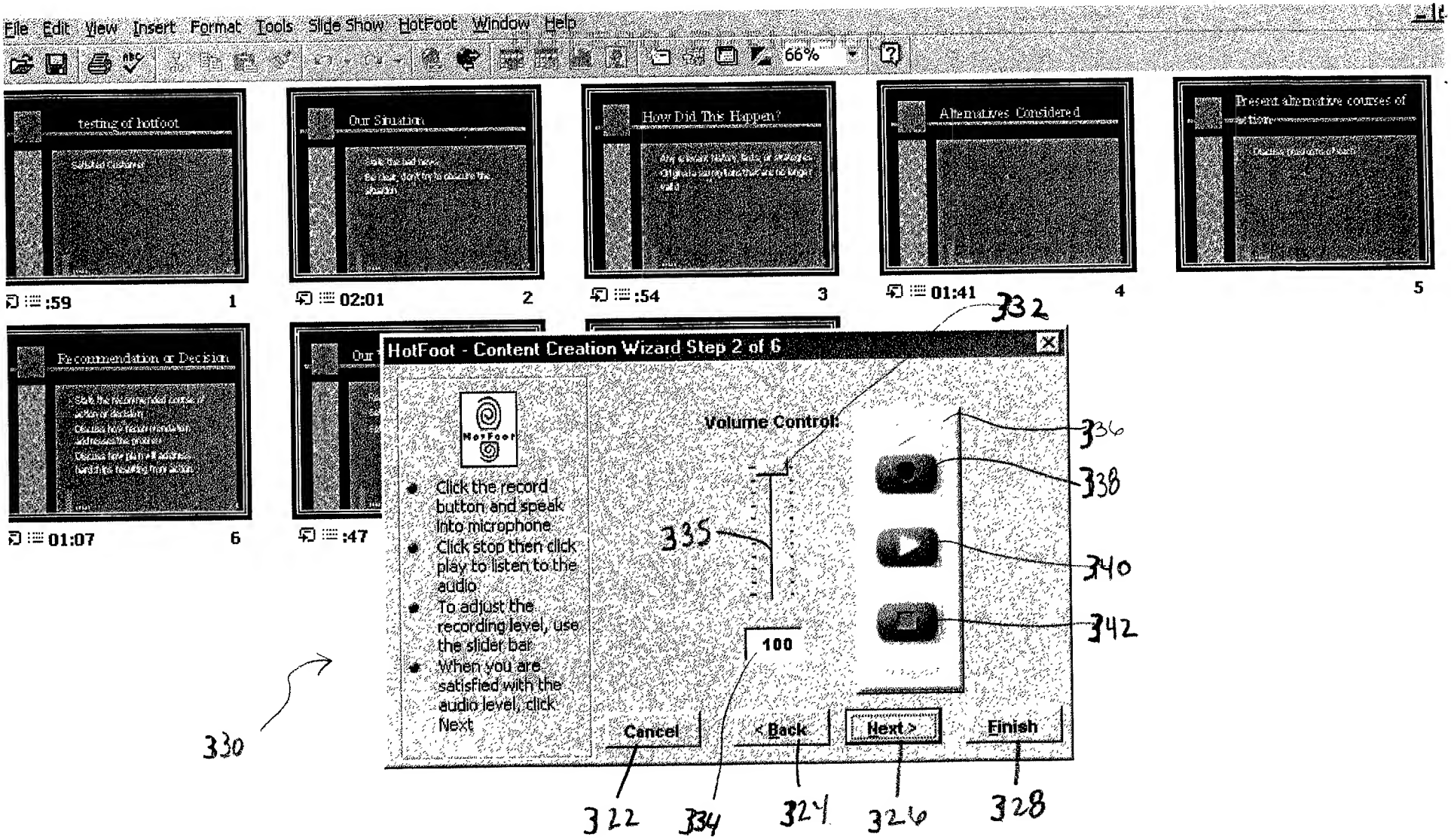

File Edit View Insert Format Tools Slide Show HotFoot Window Help
66%
testing of hotfoot
:59
1
Our Situation
02:01
2
How Did This Happen?
:54
3
Alternatives Considered
01:41
4
Present alternative courses of
5
Recommendation or Decision
01:07
6
:47
HotFoot - Content Creation Wizard Step 2 of 6
Click the record button and speak into microphone
Click stop then click play to listen to the audio
To adjust the recording level, use the slider bar
When you are satisfied with the audio level, click Next
Volume Control:
100
Cancel
< Back
Next >
Finish
332
336
338
340
342
335
330
322
334
324
326
328

FIG. 9

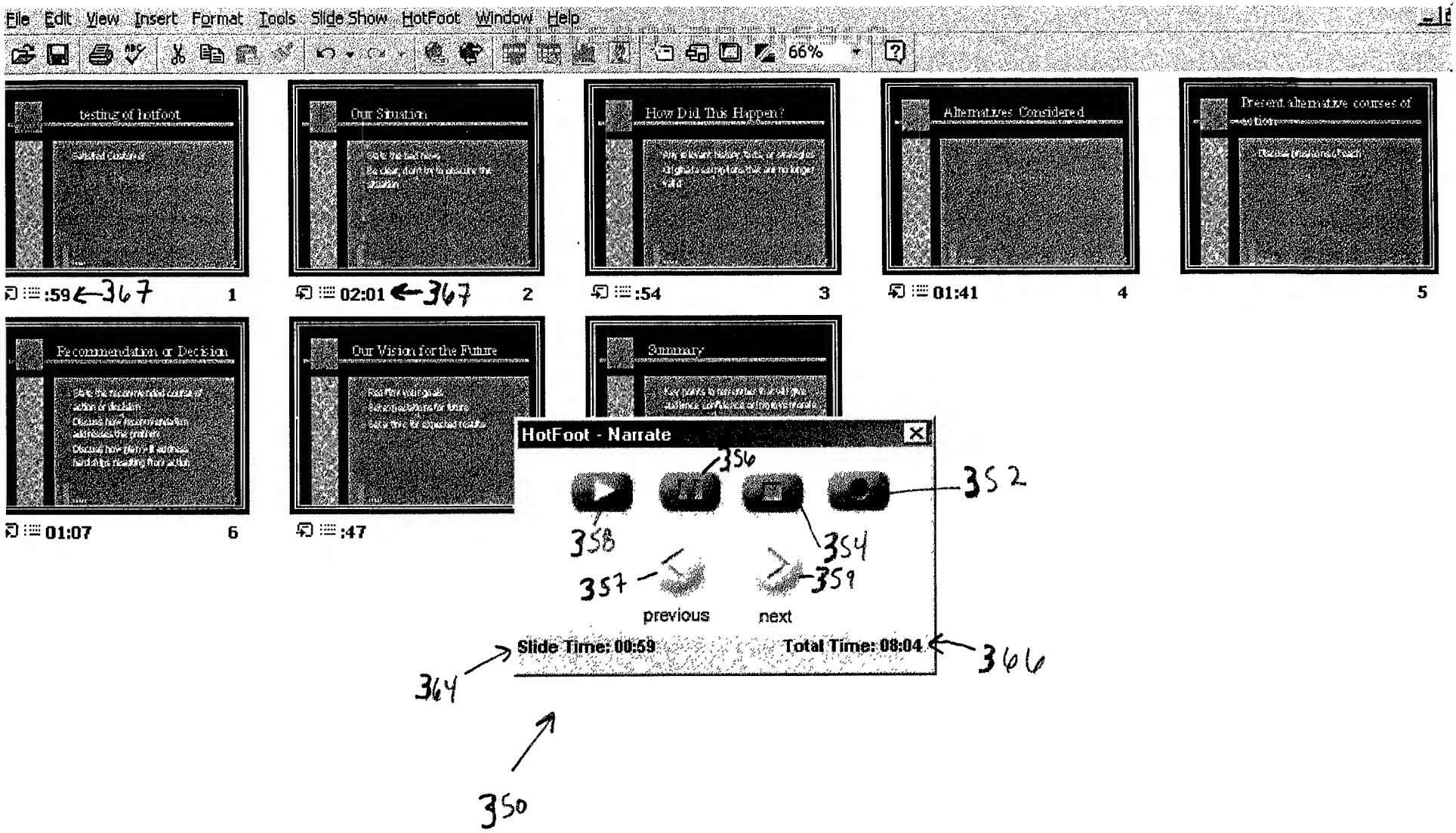

File Edit View Insert Format Tools Slide Show HotFoot Window Help
66%
testing of hotfoot
:59 ←367 1
Our Situation
02:01 ←367 2
How Did This Happen?
:54 3
Alternatives Considered
01:41 4
Present alternative courses of
5
Recommendation or Decision
01:07 6
Our Vision for the Future
:47
Summary
HotFoot - Narrate
356
352
358
354
357
359
previous
next
Slide Time: 00:59
Total Time: 08:04
366
364
350

FIG. 10

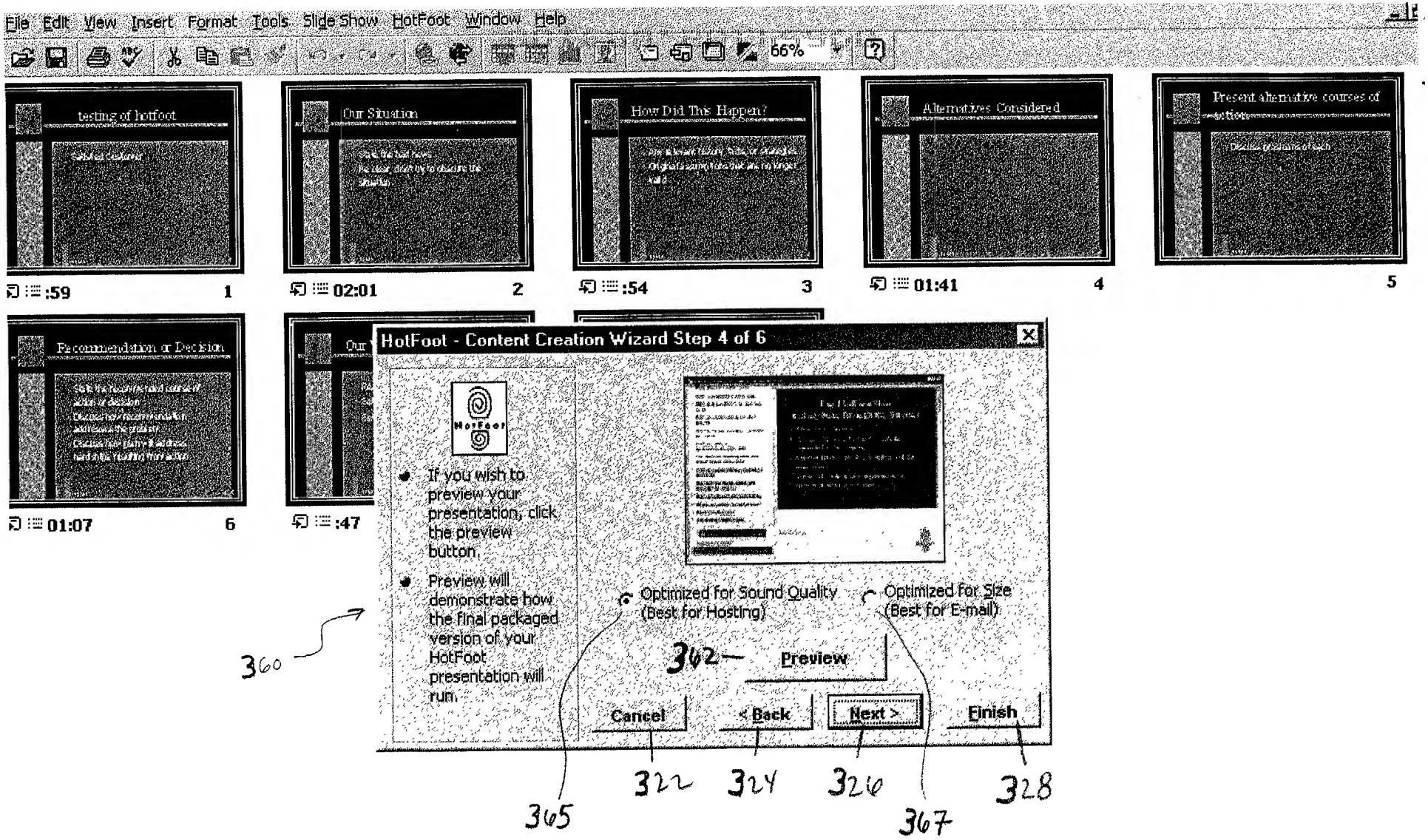

File Edit View Insert Format Tools Slide Show HotFoot Window Help
66%
testing of hotfoot
:59
1
Our Situation
02:01
2
How Did This Happen?
:54
3
Alternatives Considered
01:41
4
Present alternative courses of
5
Recommendation or Decision
01:07
6
:47
HotFoot - Content Creation Wizard Step 4 of 6
If you wish to preview your presentation, click the preview button.
Preview will demonstrate how the final packaged version of your HotFoot presentation will run.
Optimized for Sound Quality (Best for Hosting)
Optimized for Size (Best for E-mail)
Preview
Cancel
< Back
Next >
Finish
360
362
365
322
324
326
367
328

FIG. 11

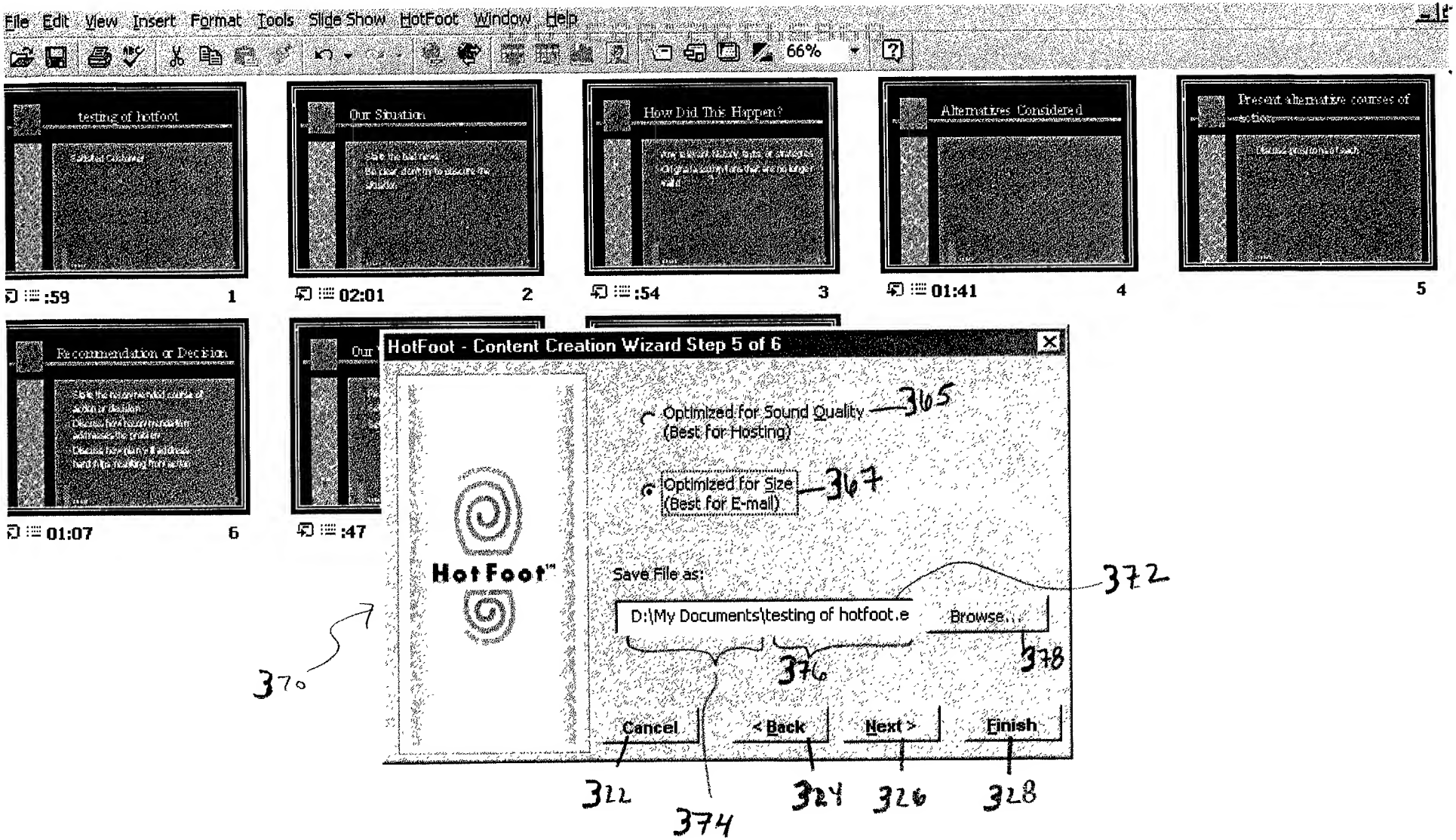

File Edit View Insert Format Tools Slide Show HotFoot Window Help
66%
testing of hotfoot
:59
1
Our Situation
02:01
2
How Did This Happen?
:54
3
Alternatives Considered
01:41
4
Present alternative courses of
5
Recommendation or Decision
01:07
6
:47
HotFoot - Content Creation Wizard Step 5 of 6
HotFoot™
Optimized for Sound Quality
(Best for Hosting)
365
Optimized for Size
(Best for E-mail)
367
Save File as:
D:\My Documents\testing of hotfoot.e
Browse...
372
370
376
378
Cancel
< Back
Next >
Finish
322
374
324
326
328

FIG 12

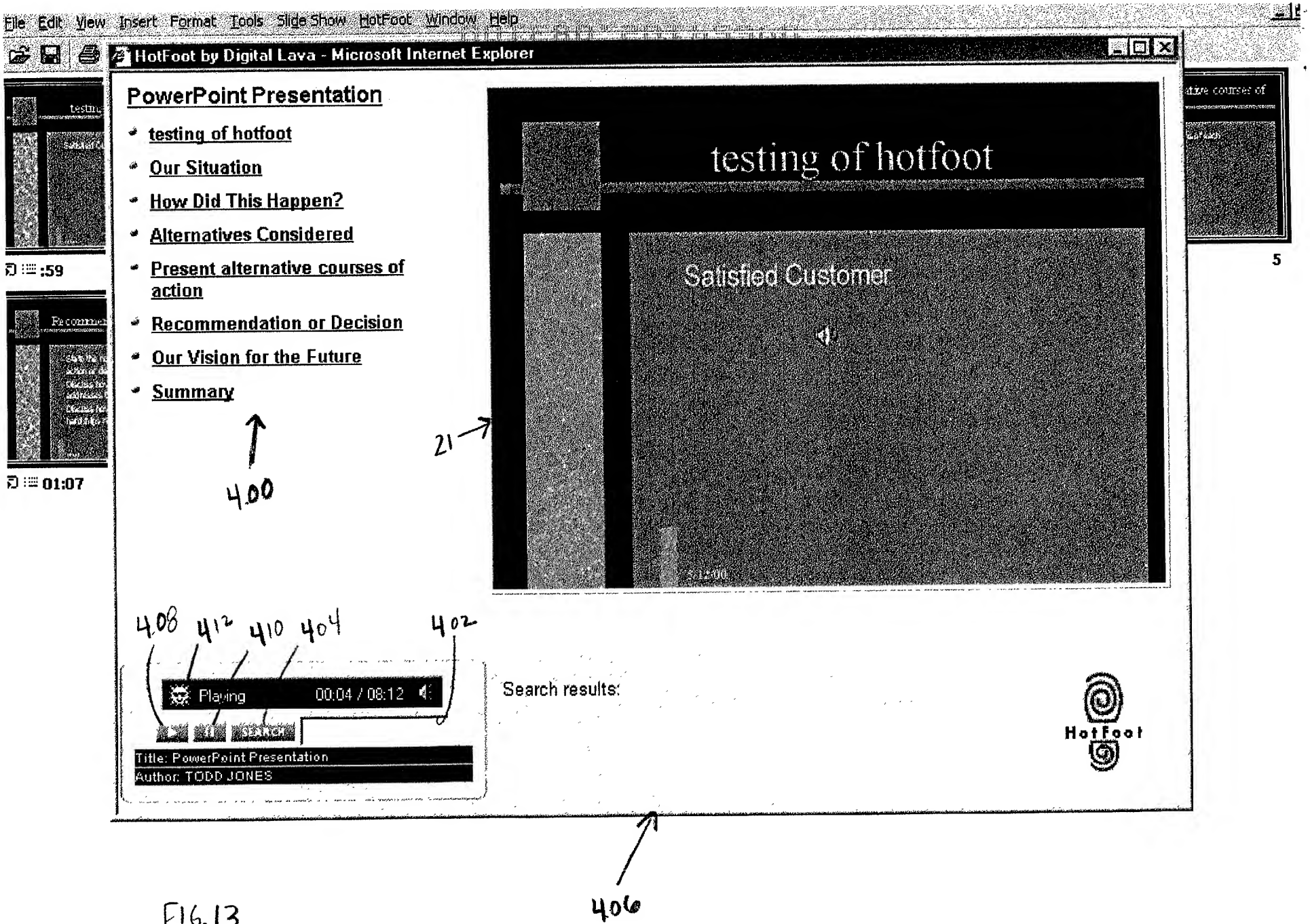

File Edit View Insert Format Tools Slide Show HotFoot Window Help
HotFoot by Digital Lava - Microsoft Internet Explorer
PowerPoint Presentation
testing of hotfoot
Our Situation
How Did This Happen?
Alternatives Considered
Present alternative courses of action
Recommendation or Decision
Our Vision for the Future
Summary
400
21
testing of hotfoot
Satisfied Customer
408
412
410
404
402
Playing
00:04 / 08:12
Title: PowerPoint Presentation
Author: TODD JONES
Search results:
HotFoot
406

FIG. 13

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATIONS PATENT

Docket No. : 40288/DWR/D453

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled SYSTEM AND METHOD FOR ASSEMBLING DISCRETE DATA FILES INTO AN EXECUTABLE FILE AND FOR PROCESSING THE EXECUTABLE FILE, the specification of which is attached hereto unless the following is checked:

__ was filed on __ as United States Application Number or PCT International Application Number __ and was amended on ___ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of the foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Application Number	Country	Filing Date (day/month/year)	Priority Claimed

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

Application Number	Filing Date

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

Application Number	Filing Date	Patented/Pending/Abandoned

POWER OF ATTORNEY: I hereby appoint the following attorneys and agents of the law firm CHRISTIE, PARKER & HALE, LLP to prosecute this application and any international application under the Patent Cooperation Treaty based on it and to transact all business in the U.S. Patent and Trademark Office connected with either of them in accordance with instructions from the assignee of the entire interest in this application;

or from the first or sole inventor named below in the event the application is not assigned; or from __ in the event the power granted herein is for an application filed on behalf of a foreign attorney or agent.

R. W. Johnston	(17,968)	Grant T. Langton	(39,739)	Jun-Young E. Jeon	(43,693)
D. Bruce Prout	(20,958)	Constantine Marantidis	(39,759)	Marc A. Karish	(44,816)
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Richard J. Ward, Jr.	(24,187)	Craig A. Gelfound	(41,032)	Richard J. Paciulan	(28,248)
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LeRoy T. Rahn	(20,356)	Kathleen M. Olster	(42,052)	Frank L. Cire	(42,419)
Richard D. Seibel	(22,134)	Daniel M. Cavanagh	(41,661)	Harold E. Wurst	(22,183)
Walter G. Maxwell	(25,355)	Molly A. Holman	(40,022)	Robert A. Green	(28,301)
William P. Christie	(29,371)	Lucinda G. Auciello	(42,270)	Derrick W. Reed	(40,138)
David A. Dillard	(30,831)	Norman E. Carte	(30,455)	John W. Peck	(44,284)
Thomas J. Daly	(32,213)	Joel A. Kauth	(41,886)	Stephen D. Burbach	(40,285)
Vincent G. Gioia	(19,959)	Patrick Y. Ikehara	(42,681)	David B. Sandelands, Jr.	(46,023)
Edward R. Schwartz	(31,135)	Mark Garscia	(31,953)	Heidi L. Eisenhut	(P-46,812)
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Gregory S. Lampert	(35,581)	Cynthia A. Bonner	(44,548)		

The authority under this Power of Attorney of each person named above shall automatically terminate and be revoked upon such person ceasing to be a member or associate of or of counsel to that law firm.

DIRECT TELEPHONE CALLS TO : Derrick W. Reed, 626/795-9900

SEND CORRESPONDENCE TO : CHRISTIE, PARKER & HALE, LLP
P.O. Box 7068, Pasadena, CA 91109-7068

I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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CAH PAS270992 1-*-8/31/00 10 23 AM